

Application No: 10/783,417
Amendment Dated: June 1, 2004
Reply to Office Action of April 1, 2004
REPLACEMENT SHEET



axmi006	----	MNQNN	NDN	NEY	EII	DSHT	SPY	FPNR	NS	DS	RY	TY	NN	NO	PT	ON	TN	YK	EW	IN	CO	GN	TO	YGD	NF	ET	FA	58
cry1Aa	----	MDNN	P	----	MDNN	P	----	NINE	CI	P	YN	CL	SN	PE	VE	VL	GG	----	----	----	----	----	----	----	----	----	26	
cry1Ac	----	MDNN	P	----	MDNN	P	----	NINE	CI	P	YN	CL	SN	PE	VE	VL	GG	----	----	----	----	----	----	----	----	----	26	
cry1Ia	----	MLK	N	QD	K	H	S	F	SS	NA	K	V	D	----	K	I	S	T	D	S	----	----	----	----	----	----	50	
cry3Aa1	----	MIR	K	G	R	K	M	P	N	R	S	E	H	D	T	I	K	T	T	E	N	----	----	----	----	----	63	
cry3Ba	----	MIR	M	G	R	K	M	P	N	R	S	E	Y	D	T	I	K	V	T	P	N	S	----	----	----	----	63	
cry4Aa	----	MNP	Y	Q	N	K	N	E	Y	E	T	I	N	A	S	O	K	K	L	N	----	----	----	----	----	----	59	
cry6Aa	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
cry7Aa	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	49	
cry8Aa	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	58	
cry10Aa	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	62	
cry16Aa	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	61	
cry19Ba	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	58	
cry24Aa	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	52	

axmi006	80	AD	T	A	A	V	S	A	G	T	I	V	S	G	T	I	A	I	I	S	E	G	T	I	I	V	E	P	A	G	E	Q	D	K	T	V	T	Q	F	I	K	M	C	E	I	F	V	D	T	P	L	143
cry1Aa	----	ER	I	E	T	G	Y	T	P	I	D	I	S	L	S	T	O	F	L	L	S	E	F	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	89		
cry1Ac	----	ER	I	E	T	G	Y	T	P	I	D	I	S	L	S	T	O	F	L	L	S	E	F	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	89			
cry1Ia	----	VE	P	F	V	S	A	S	T	I	O	T	G	I	G	I	A	K	I	L	G	T	L	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	117				
cry3Aa1	----	AL	D	S	S	T	T	K	D	V	I	O	K	G	I	S	V	A	G	D	L	L	G	V	W	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	130				
cry3Ba	----	VLD	S	S	T	V	K	D	A	V	G	T	G	I	S	V	A	G	O	I	L	G	V	W	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	131					
cry4Aa	----	DF	E	T	F	I	D	S	G	E	L	S	A	Y	T	I	A	G	I	G	T	L	I	P	V	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	130					
cry6Aa	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
cry7Aa	----	EA	LA	S	G	N	T	A	I	N	T	V	S	V	I	G	A	T	L	S	A	L	G	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	116			
cry8Aa	----	NP	ET	F	I	S	S	T	I	Q	T	G	I	V	G	R	I	L	G	A	L	G	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	127					
cry10Aa	----	NF	AS	SE	T	I	V	G	S	A	G	I	V	G	T	I	M	L	G	A	F	A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	131					
cry16Aa	----	AS	VR	A	G	L	K	G	L	G	I	V	S	T	I	V	C	F	E	G	S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	128					
cry19Ba	----	S	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	120						
cry24Aa	----	IS	PS	PA	AA	I	T	S	K	I	V	S	I	V	L	K	T	AK	A	V	AS	SI	AD	S	IK	SS	L	G	I	S	K	T	I	T	EN	N	V	S	----	----	----	----	----	----	----	117						

FIG. 1A

l	aqaan	hl	l	da	q	g	y	yc	y
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FIG. 1C

axmi006 : 460 * * 480 500 520
 cry1Aa : TELLYGERTGSSPTTKTIRPFESYKVSIVTDROSPVPSPIQ-PHFIINQTELYLNGSSNNTLKYSAGGSLSNVQNT : 491
 cry1Ac : AFPLFGNAGNAAPP-VLVSITGLGIFRTLSSPLRYRIILGSGPNNQE-LFVLDGTEFSFASLTTLNLPSTIYRQ-- : 404
 cry1Ia : TFRLYGTMGNAAPQQRIVAGLGGVYRTLSSITLYRRPFN-IGINNQQ-LSVLDGTEFAYG-TSSNLPSSAVYRK-- : 403
 cry3Aa1 : EFRTIGGTLNISTQGSTNTSINPVTLPFTSRDVRITESLAGLNFLT-QPVNGVPRVDEHVKFVTHPIASDNFY : 439
 cry3Ba : RPSIGSNDIITSPFYGNKSSEPVONLEFNGEKVYRAVANTNLAWPS-AVYSGVTKEVEESQYNDOTDEASTQTYD : 448
 cry4Aa : RPSIGSNDIITSPFYGDKSIEPIQKLSFDGQKVYRTIANTDIAAFPDGKIYFGVTKEVDEESQYDDQKNETSTQTYD : 450
 cry6Aa : KSSVFGNHNVTDKLSGLATNIYIFLLNVISLDNKYLYNDYNNISKMDFFITNGTRILLEKELTAGSGQITTYDVNK : 471
 cry7Aa : QYEEAAKNIVTSLDQFLHGDOKKLEGVINIQRLKEVQALNOAHGE-SSPAHKEILLEKVKNLKTTLERTIKAEQ : 244
 cry8Aa : KSEQSNLYTIGIYGKTSGYISSGAYSFHGNDIYRTLAAPSVMYYPY-TQNYGVEQVEFYGVKGVHVRGDNKY- : 433
 cry10Aa : KYRRTADSTVITYTANYGRITSEKNSFALEDRIEINSTEANLANYY-QKAYGVPGSMHMKRGTSSTIAYLYS : 451
 cry16Aa : THINDDRNIIWGAHVHGNIIISQDTSKVFPPFYRNKPIDKVEIVRHREYSDIYEMIFFSNSSEVFYSSNSTIENN- : 448
 cry19Ba : EGSFRGQDTDYGGTSSSTINIPSNYSYVNLWTENYIYIPWGDVNIITKMFNSVTDNNSKELIYGAHRTNKPVR : 451
 cry24Aa : NGPFLGQDTEYGGTSSYIDISNNSSIYNLWTKNVEWIIYPTWDPVNIITKINFISITDNSSSESIYGAERMNKPVR : 455
 : GRIDVVMFRQTGDTAYEDPSTFISNIIYDDIYKLDLRAAAVSTIQGAMDTTFGVSSSRFFDIRGRNQLYQSNKP- : 447

axmi006 : 540 * * 560 580 600
 cry1Aa : -----TFFQFPRKKDCNIIVIDPGCSPNFNNYSHILSHFSITFTSYVYIGLQILDTGVLGWTHSSVDRYMAISD : 560
 cry1Ac : -----RGTVDSLVDVIPPQDNSVPPRAGFSHRSLSHVTMLSQAG--AVYTLRAPTFSWQHRSAEFNMILIPS : 467
 cry1Ia : -----SGTVDSLDEIPPPONNNVPPRQGFSHRSLSHVSMFRSGFSNS-SVSIIRAPMFSWIHRSAEFNNLIAS : 468
 cry3Aa1 : PGYAGIG--TQLQDSENELPPEATGQPNVESYSHRSLSHIGLISAS-----HVKALVYSWTHRSADRWTWTEP : 504
 cry3Ba : SKR--NNGAVSWDSIDQLPPEPTTDEPLEKGYSHQNLNYVMCFLMQGS-----RGTPVLITWTHKSVDFEFNMIDS : 514
 cry4Aa : SKRY--NGYLGACQDSIDQLPPEPTTDEPLEKAYSHQNLNYAECFLMQDR-----RGTPVFFTWTHRSVDFEFMTIDA : 517
 cry6Aa : N-----IFGLPILKRRENQGNPTLFFTYDNYSHILSFIKSLSIPAT-----YKTQVYIFAWTHSSVDPKNTIYT : 535
 cry7Aa : DLEKKVEYSFLLGPLLGFWVVEILENTAVQHIKNQIDELKKQLDSAQHDLD RDVKIIGMLNSINTDIDNLYSQGQ : 319
 cry8Aa : -----DLTYDSLIDQLPPEPDG--EPIHEKYTHRLCHATAIFKSTP--DYDNATIPIFSWTHRSAEYNNRIYP : 494
 cry10Aa : KTH TALQCTQVYESSEDEIFLDRT-VEVAESYSHRSLSHITSHSEKNG--SAYYGSFEPVFWTHTSADLNNTIYS : 523
 cry16Aa : -----YKRTDSYMIKPQOTWKNEEYCHTLSYIKTDNYIFSVVR-----ERRRVAESWTHTSVDFQNTIDL : 507
 cry19Ba : -----TDFDFTLN-----KEGTELAKYNDYNIHILSYMLINGETFGQ-----KRHGYSAFATHSSVDPNNTIAA : 509
 cry24Aa : -----TDFNFLIN-----RAGNGPTTYNDYNIHILSYMLINGETFGQ-----KRHGYSAFATHSSVDRYNTIYP : 503
 : -----YPSLPITITIFGESESEGNANDYSHILCCKIKILOEDSSNICE-GRSSLLSHAWTHASLDRNNTILP : 512

th s d n i

h 6 s

p p

FIG. 1D

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axmi006 : K I T M I P A I K G N N L D T N S K V I E G P G H T G G N L V L Q S Q G ----- R L E I T C E T P N S T O S F I R L R Y A T N G A G N T L :
cry1Aa : S O I T O I P L T K S T N L G S G T S V K G P G E T G G D I L R R T S P G ----- Q I S T L R V N L T A P L S O R Y R V R I R Y A S T T N L Q E H :
cry1Ac : D S I T O I P A V K G N F L F N G S V I S - G P G E T G G D L V R L N S S G N N I Q N R G Y I E V P I H F P S T S T R Y R V R I R Y A S V T P I H L N :
cry1Ia : N S I T O I P L V K A F N L S S G A A V R G P G E T G G D I L R R T N T G ----- T F G D I R V N I N P P F A Q R Y R V R I R Y A S T T D L Q E H :
cry3Aa1 : K K I T O I P L V K A Y K L Q S G A S W A G P R F T G G D I Q C T E ----- N G S A A T I Y V T P D V S Y S Q K Y R A R I E Y A S T S Q I T E T :
cry3Ba : E K I T O I P V K A Y A L S S G A S I I E G P G E T G G N L L F L K E S S ----- N S I A K F K V T L N S A A L Q R Y R V R I R Y A S T T N L R L F :
cry4Aa : H L T I T O I P A V K A N S L G T A S K V V Q G P G H T G G D I L D F K D ----- H F K I T C Q H S N F Q O S F I R I R Y A S N G S A N T R :
cry6Aa : E A K V F Q L Q G I W A T I G A Q I E N L R T T S L Q E V Q D S D D A D E I Q I E L E D A S D A W L V V A Q E A R D F T L N A Y S T N S R Q N L P :
cry7Aa : N K I T K I P A V K M Y K L D D E S T V K G P G E T G G D L V K R G S T G ----- Y I G D I K A T V N S P L S O K Y R V R I R Y A T N V S G Q E N :
cry8Aa : D K I T O I P A V K G D M L Y L G G S V V Q G P G E T G G D I L K R T N P S ----- I L G T F A V T V N G S L S O R Y R V R I R Y A S T T D F E E T :
cry10Aa : D N I T O I H A L K A L K V S S D S K I V K G P G H T G G D L M L K D S ----- M D F R V R F L K N V S R Q Y O V R I R Y A T N A P K T T V :
cry16Aa : N K I T O I P V K A S S I N G S I S I E K G P G E T G G D L V K M R A D S ----- G L T M R F K A E L L D K Y R V R I R Y K C N Y S S K L I :
cry19Ba : D K I V O I P A V K T N I V G A N I I K - - G P G H T G G D L L K L E Y E R ----- F L S L R I K - L I A S M T F R I R I R Y A S N I S Q Q M M :
cry24Aa : D E I T O I P A V T A Y E L R G N S S V V A G P G S T G G D L V K M S Y H S ----- V W S F K V Y C S E L K N Y R V R I R Y A S H G N C Q E L :

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itq pa k q r r r ya

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axmi006 : P N I S L T I P G V I G T P P O R L N N T F S G T N Y N - N I Q G D F G Y F O F P S T V T L P L N R - - N I P F I E N R A D V S N - S I L I I D K I :
cry1Aa : T S I D G - - - - R P I N Q G N F S A T M S S G S - - - - N I Q S G S F R T V G E T T P E N F S N G - - - - S S V F T L S A H V F N S G N E V Y I D R I :
cry1Ac : V A N W G N - - - - S S I F S N T V P A T A T S I D - - - - N I Q S S D F C Y F E S A N A F T S S L G - - - - N - - - I V G V R N F S G T A G V I I D R F :
cry1Ia : T S I N G - - - - K A I N Q G N F S A T M N R G E - - - - D L D Y K T F R T V G E T T P E S F L D V - - - - Q S T F T I G A W N F S S G N E V Y I D R I :
cry3Aa1 : L S I D G - - - - A P F N Q Y Y E D K T I N K G D - - - - T L T Y N S E N L A S E S T P E E L S G - - - - N N L Q I G V T G L S A G D K V Y I D K I :
cry3Ba : V Q N S N - - - - N D F L V I Y I N K T M N I D G - - - - D L T Y Q T E D F A T S N S N M G F S G D - - - - T N D F I I G A E S F V S N E K I Y I D K I :
cry4Aa : A V I N L S I P G - - V A E L G M A L N P T F S G T D Y T N K Y K D F O Y L E F S N E V K F A P N Q - - N I S L V F N R S V Y T N T T V I I D K I :
cry6Aa : I N V I S D S C N C S T T N M T S N Q Y S N P T T N M T S N Q Y M I S H E Y T S L P N N E M L S R N - - - - S N L E Y K C P E N N F M I Y W Y N N S :
cry7Aa : V A I N D - - - - K I T L Q T K F O N T V E T I G E G K D L T Y G S F G Y I E Y S T I Q F P D E - - - - H P K I T L H L S D L S N S S F Y V D S I :
cry8Aa : L M I G - - - - D T I E K N R E N K T M D N G A - - - - S L T Y E T F K F A S F I T D E Q F R E T - - - - Q D K I L S M Q D F S S G Q E V Y I D R I :
cry10Aa : F L T G - - - - I D T I S V E L P S T S R Q N P N A T D L T Y A D E G Y V I T P R T V P N K T F E G E D T L M T Y G T P N H S Y N I Y I D K I :
cry16Aa : L R K W K G E - - - - G Y I Q Q Q I H N I S P T Y G - - - - A F S Y L E S F T I T T E N I F D L T M - - - - E V T Y P Y G R Q F E D I P S L I I D K I :
cry19Ba : I N I G - - - - - Y Q N P T Y F N I P T T S R D - Y T E L K F E D F O L V D T S Y I Y S G G P - - S I S S N T L W L D N F S N G P V I I D K I :
cry24Aa : M K R W P S - - - - T G V A P R Q W A R H N V Q G T F S N S M R Y E A F K Y I D I F T I T P E N N - - - - - F A F T I D L E S G G D L F I I D K I :

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FIG. 1E

Application No: 10/783,417
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REPLACEMENT SHEET

axmi006	EFIPITSSMHQNR	---	KQKLE	ETIOTKIN	FFTNHTKTL	---	760	780	*	800	
cry1Aa	EEFVPAE	VTFEAEYD	---	EEFAQAKAVN	ELFF	ISSNQIG	TKDVT	DXH	DDQVS		735
cry1Ac	EEFIPV	TATLEAEYN	---	EEFAQAKAVN	ALFF	STNQLG	KTNT	DXH	DDQVS		648
cry1Ia	EEFVPVE	VTYEAED	---	EEFAQAKAVN	ALFF	STNPRG	KTDX	KDYH	DDQVS		650
cry3Aa1	EEFIPVN	---	---	---	---	---	---	---	---		685
cry3Ba	EEFIPVQ	---	---	---	---	---	---	---	---		652
cry4Aa	EEFLPI	TRSIREDREKQK	ETVQOI	INTF	YANPIKNT	LQSE	ETDYD	TDQAA			659
cry6Aa	---	DWYNN	SDWYNN	---	---	---	---	---	---		722
cry7Aa	EEFIPV	DVYAEKEK	---	EEFAQAKAVN	ILFF	TEGRNAL	QKDV	TDYK	DDQVS		475
cry8Aa	EEFIPV	DETTEAEQD	---	EEFAAKKAVN	ALFF	ENTKD	GRPG	VTDXE	VNQAA		677
cry10Aa	EEFIPIT	QSVLDYTEKQNT	EEKTK	OKI	VNDL	LFVN	---	---	---		702
cry16Aa	EEFLPTN	---	---	---	---	---	---	---	---		675
cry19Ba	EEFIPLG	ITLNQAQG	---	YDTYDQNA	NGMY	HQNS	SGYN	QEN	NTYYQS		648
cry24Aa	EEFIPV	SGSAFEGKQNT	EEKTK	OKAVN	D	LFIN	---	---	---		679
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FIG. 1F